SECRET
(When Filled In)

997425

R & D CATALOG FORM

DATE: 5 January 1965

1. PROJECT TITLE/CODE NAME: Image Intensifier Screen

2. SHORT PROJECT DESCRIPTION: This project is to develop a rear-projection screen which will, itself, intensify the brightness of an image projected upon it.

3. CONTRACTOR NAME: NA

4. LOCATION OF CONTRACTOR: NA

5. CLASS OF CONTRACTOR: NA

6. TYPE OF CONTRACT: NA

7. FUNDS: FY 19 65 [redacted]
FY 19 $
FY 19 $

8. REQUISITION NO.: NA

9. BUDGET PROJECT NO.: NP-V-5

10. EFFECTIVE CONTRACT DATE (Begin - end): April 1965 - March 1966

11. SECURITY CLASS.: Title & Work Unclass. Sponsor Assoc. - Conf.

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION: DDI/NPIC/P&DS, [redacted]

Declass Review by NGA

13. REQUIREMENT/AUTHORITY: Exploitation of reconnaissance films

14. TYPE OF WORK TO BE DONE: Applied Research

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Viewers and other interpretation equipment	

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.: One 12" x 12" prototype panel and associated circuitry. Monthly progress reports and the final technical report.

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION: The Naval Training Devices Center is supporting a contract with [redacted] to develop an image intensifier screen; however, this screen, when developed, will not satisfy our requirements which are much more rigid. Other intensifier screens have been developed for DOD and industry; however, they are low resolution screens for portraying non-image type data.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required): Rear-projection viewers have come into standard use for scanning and interpreting photo transparencies. Most of these materials are high-resolution and require great enlargement before the human visual system can assess the total information content. This enlargement, in turn, requires greater projection lamp power in order to attain the necessary image brightness over the entire viewing screen. Increased lamp power is accompanied by greatly increased heat incident on the film so that it is distorted or damaged. There are in existence various techniques for cooling at the film plane, e. g. . . . dichroic

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

R & D CATALOG FORM (Continued)

18. mirrors, fans, liquid gates, etc., In spite of these techniques, stationary or slowly moving film is still subject to heat damage at high magnification.

It has been postulated that this problem might be solved by intensifying the image at the viewing screen. Such a screen would require minimal power in the projection illumination, but would produce a bright image for the viewer.

The primary objective is that, under nominal highlight illumination of approximately 10 foot candles, the image-intensifier screen should provide the viewer with an image of adequate gain and brightness while still exhibiting satisfactory performance in many other aspects, such as, resolution, tone range, linearity, color temperature, viewing angle, response time, size, life and cost.

A secondary objective is to provide a means for controlling modulation of image contrast, such as tone-reversal and compression or expansion.